~~7. (Twice Amended) The system of claim 11, wherein said first multiplexing unit~~ comprises:

a first coarse wavelength division multiplexing unit configured to multiplex the optical signals in the set of multiple channels into first, second, third, and fourth subgroups of optical signals depending upon wavelength in corresponding first, second, third, and fourth subwindows within the operating window; and

first, second, third, and fourth fine wavelength division multiplexing units optically coupled in parallel between said first coarse wavelength division multiplexing unit and said plurality of optical line amplifiers, said first, second, third and fourth fine wavelength division multiplexing units further configured to multiplex said first, second, third, and fourth subgroups of optical signals by wavelength into channels for carrying optical signals having different wavelengths within corresponding first, second, third and fourth subwindows.

9. (Amended) The system of claim 11, wherein said first multiplexing unit comprises a coarse WDM unit and at least one fine WDM unit, whereby fine WDM units can be added to the system in a modular fashion to support channels in respective subwindows as needed.

10. (Amended) The system of claim 11, wherein said at least one optical fiber comprises at least one single mode optical fiber selected from the following types of single-mode optical fiber: non-dispersion-shifted optical fiber, zero-dispersion shifted optical fiber, and low slope ~~dispersion-shifted optical fiber.~~

~~11. (Twice Amended) A system for amplifying optical signals in a set of multiple~~ channels in an operating window of a fiber communication network, comprising:

a plurality of subwindows within said operating window;

a first multiplexing unit configured to multiplex the optical signals in the set of multiple channels into a plurality of subgroups of optical signals, each subgroup associated with one of said plurality of subwindows within the operating window, such that each subwindow corresponds to and is associated with a different group of channels within the operating window;

B3 cont

a plurality of optical line amplifiers, each amplifier configured to amplify a subgroup of optical signals associated with a different subwindow of said plurality of subwindows within the operating window;

a second multiplexing unit configured to multiplex the optical signals in the set of multiple channels into said at least one subgroup of optical signals in a respective subwindow of said plurality of subwindows within the operating window; and

a plurality of optical fibers coupled between said first and second multiplexing units, each of said plurality of optical line amplifiers optically coupled to one of said plurality of optical fibers to amplify said subgroups of optical signals corresponding to respective subwindows within the operating window,

wherein said first and second multiplexing units are arranged at first and second sites, each of said plurality of optical line amplifiers and each of said plurality of optical fibers configured to transport optical signals traveling in at least one of uni-directional traffic and bi-~~directional traffic between said first and second sites.~~

12. (Three Times Amended) The system of claim 11, wherein said plurality of optical line amplifiers comprise first to fourth line amplifiers, said plurality of subgroups of optical signals comprise first to fourth subgroups of optical signals in corresponding first to fourth subwindows within the operating window, and further comprising:

a second multiplexing unit configured to multiplex the optical signals in the set of multiple channels into said first to fourth subgroups of optical signals in corresponding first to fourth subwindows within the operating window, each subwindow corresponding to a different group of channels within the operating window; and

A3 Cont.

first to fourth optical fibers arranged in parallel between said first and second multiplexing units, said first to fourth optical line amplifiers optically coupled along said first to fourth optical fibers, respectively, and configured to amplify said first to fourth subgroups of optical signals corresponding to said first to fourth subwindows within the operating window;

wherein said first and second multiplexing units are arranged at first and second sites, and said first and third optical line amplifiers and said first and third optical fibers each configured to pass optical signals traveling in a first direction between said first and second sites, and said second and fourth optical fibers each configured to pass optical signals traveling in a second direction between said first and second sites opposite to said first direction.

13. (Twice Amended) The system of claim 11, wherein each of said plurality of optical line amplifiers further includes a dispersion compensation device, and wherein subgroups of optical signals corresponding to respective subwindows within the operating

~~window are amplified for each subwindow to make amplifier gain approximately equal~~ across the channels in the operating window.

15. (Amended) The method of claim 20, wherein the operating window comprises an erbium band of wavelengths between approximately 1520 nm and 1561 nm having four subwindows, and said multiplexing step multiplexes the optical signals in the set of multiple channels into four subgroups of optical signals in respective subwindows within the operating window, and said amplifying step amplifies in parallel said four subgroups of optical signals.

16. (Amended) The method of claim 20, wherein said multiplexing step comprises the step of coarse multiplexing the optical signals in the set of multiple channels into first, second, third and fourth subgroups of optical signals depending upon wavelength in corresponding first, second, third and fourth subwindows within the operating window,

said first subwindow includes a first group of channels,

said second subwindow includes a second group of channels,

said third subwindow includes a third group of channels, and

said fourth subwindow includes a fourth group of channels.

19. (Amended) The method of claim 20, wherein said multiplexing step multiplexes optical signals in the operating window into first to sixteenth channels having the following approximate wavelengths:

Channel No.	Approximate Wavelength (nm)
1	1530.33

2	1531.90
3	1533.47
4	1535.04
5	1538.19
6	1539.77
7	1541.35
8	1542.94
9	1547.72
10	1549.32
11	1550.92
12	1552.52
13	1555.75
14	1557.36
15	1558.98
16	1560.61

D5 cont

20. (Twice Amended) A method of amplifying optical signals in a set of multiple channels in an operating window of a fiber communication network, comprising:

providing a plurality of subwindows within said operating window;

multiplexing the optical signals in the set of multiple channels into a plurality of subgroups of optical signals, each subgroup associated with one of said plurality of subwindows within the operating window, such that each subwindow corresponds to and is associated ~~with a different group of~~ channels within the operating window; and

~~amplifying each~~ of said subgroups ~~of optical signals associated with said plurality of~~ subwindows within the operating window using a different optical line amplifier for each subgroup,

wherein said multiplexing further comprises:

coarse wavelength division multiplexing the optical signals in the set of multiple channels into first, second, third, and fourth subgroups of optical signals depending upon wavelength in corresponding first, second, third, and fourth subwindows within the operating window; and

X5 cont

fine wavelength division multiplexing said first, second, third, and fourth subgroups of optical signals by wavelength into channels for carrying optical signals having different wavelengths within corresponding first, second, third, and fourth subwindows.

21. (Amended) The method of ~~claim 20,~~ wherein said multiplexing step is performed at a first site, and further comprising the steps of:

multiplexing at a second site the optical signals in the set of multiple channels in said at least one subgroup of optical signals in said at least one corresponding subwindow within the operating window; and

passing said at least one subgroup of optical signals corresponding to said subwindow within the operating window over an optical path extending between said first and second sites.

24. (Amended) The method of claim ~~20, wherein said at least one subgroup of optical~~ signals comprises first to fourth subgroups of optical signals in corresponding first to fourth subwindows within the operating window, and further comprising the steps of:

passing optical signals in said first and third subwindows in a first direction between first and second sites; and

passing optical signals in said second and fourth subwindows in a second direction between first and second sites.

26. (Twice Amended) The method of claim 20, further comprising the step of compensating dispersion magnitude separately for each subwindow, and wherein said subgroups of optical signals corresponding to said subwindows within the operating window are amplified for each subwindow to make amplifier gain approximately equal across the channels in the operating window.

28. (Three Times Amended) A system for modular amplification of optical signals in a set of multiple channels in an erbium band operating window of a fiber communication network, comprising:

first and second wavelength division multiplexing units, wherein said first and second wavelength division multiplexing units each comprise a coarse WDM unit and at least one fine WDM unit; wherein fine WDM units can be added to the system in a modular fashion to support channels in respective subwindows of said operating window as needed;

a fiber link, having at least one optical fiber, optically coupling said first and second wavelength division multiplexing units;

~~optical~~ line ~~amplifiers associated~~ with each fine WDM unit and configured to amplify optical signals within a respective subwindow corresponding to each fine WDM unit; and

dispersion compensation units provided along said at least one optical fiber in said fiber link, and wherein optical line amplifiers and dispersion compensation units can be added to the system in a modular fashion to support channels in respective subwindows as needed.

D8 Cont'd.

29. (Twice Amended) A wavelength division multiplexing system for multiplexing optical signals in a set of multiple channels within an operating window of a fiber communication network, comprising:

a coarse wavelength division multiplexing/demultiplexing unit; and

at least one fine wavelength division multiplexing/demultiplexing unit; wherein,

said coarse wavelength division multiplexing/demultiplexing unit demultiplexes the optical signals into subgroups of optical signals in corresponding subwindows within said operating window, each subwindow corresponding to a different group of channels within said operating window, and

each fine wavelength division multiplexing/demultiplexing unit demultiplexes the optical signals within a respective subgroup of optical signals into individual channels within a corresponding subwindow; and

optical line amplifiers associated with each of the at least one fine wavelength division multiplexing/demultiplexing units and configured to amplify optical signals within a respective ~~subwindow~~ corresponding ~~to each respective subgroup of optical~~ signals.

~~34. (Twice Amended)~~ The system ~~of claim 29, wherein:~~

said coarse multiplexing/demultiplexing unit comprises a first coarse wavelength division multiplexing/demultiplexing unit configured to demultiplex said optical signals in said set of multiple channels into first, second, third, and fourth subgroups of optical signals depending upon wavelength in corresponding first, second, third, and fourth subwindows within the operating window; and

said at least one fine wavelength division multiplexing/demultiplexing unit comprises first, second, third, and fourth fine wavelength division multiplexing/demultiplexing units optically coupled to said first coarse wavelength division multiplexing/demultiplexing unit, said first, second, third, and fourth fine wavelength division multiplexing/demultiplexing units further demultiplexing said first, second, third, and fourth subgroups of optical signals by wavelength into channels for carrying optical signals having different wavelengths within corresponding first~~, second, third, and fourth subwindows.~~

~~35. (Twice Amended)~~ A method of ~~multiplexing optical signals~~ in a ~~set of multiple~~ channels within an operating window of a fiber communication network, comprising:

coarse wavelength division demultiplexing the optical signals into subgroups of optical signals in corresponding subwindows within said operating window, each subwindow corresponding to a different group of channels within said operating window; and

fine wavelength division demultiplexing the optical signals within a respective subgroup of optical signals into individual channels within a corresponding subwindow;

amplifying each of said subgroups of optical signals using a different optical line amplifier for each subgroup.